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ABSTRACT

This module provides information about the development of evaluation strategies and mechanisms for vocational education programs. Sample evaluation strategies are provided using a transition programming example. The guide includes a list of definitions and uses a question-and-answer format to discuss the rationale for program evaluation, beginning the process, what to evaluate, measurable objectives, types of measurement devices, data analysis techniques, and using evaluation data. Six references and examples of evaluation materials are included. (KC)

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TITLE: EVALUATION OF EDUCATIONAL PROGRAMS

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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Abstract: Information is provided regarding the development of evaluation strategies and mechanisms for educational programs. Sample strategies of evaluation are provided using a transition programming example.

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EVALUATION OF FDUCATIONAL PROGRAMS

Overview

Two primary forces lie behind the rationale for conducting program evaluation. (1) ACCOUNTABILITY--Patton (1982) outlines the emergence of the first rationale as rooted in the massive influx of federal money in the 1950's to innovative practices in education and health care. Evaluation research was needed to provide data on how the many programmatic changes and expenditures made a difference in the lives of the federal money recipients. Currently, budgetary restrictions have heightened the need for practical and elegant evaluation interventions. (2) DECISION MAKING--Smith (1987) provides the second; utilization focused rationale for programmatic evaluation. Smith defines program evaluation as, "a planned process of gathering and analyzing data to help make decisions less risky" (p. 1). Thus, program evaluation data provide decision makers with information not only for funding decisions but, more practically, with information regarding programmatic components that work and those that perhaps need refocusing or total removal from program intervention.

Overall, program evaluation is an integral and useful tool for any educational project. It provides justification for the existence of specific programs, helps focus the program and lays groundwork for future endeavors.

Definitions/Terminology

E-Team	Evaluation team consisting of members from each component of the educational program. The E-Team spearheads evaluation activities.
Population	The individuals who are evaluated, i.e., students, parents, employers, teachers, counselors, administrators
Data	The information that is gathered as a result of the evaluation. Data may be: quantitative--numerical and/or standardized information; or qualitative--open-ended, detailed and descriptive information.
Mission Statement	The most general statement of the program's purpose.
Goals	More specific statements that describe various aspects of the program to be evaluated.
Objectives	Very specific statements that provide measurable data regarding the program being evaluated.

Frequently Asked Questions

Q. WHY SHOULD I CONDUCT PROGRAM EVALUATION?

A. Smith (1987) reviews five major reasons for conducting evaluation that were first identified by Cook and Cooper (1978). Vindication--program evaluation data can be used to justify the work and existence of the educational program. Salesmanship--evaluation data can help determine areas that can be expanded and to attract participants to the program. Verification--evaluation data will help administrators discover if the stated goals of the program are actually being met. Improvement--program evaluation data can assist in the development of more effective and efficient program systems. Understanding--administrators may use evaluation data to understand how their program functions and to identify strong or weak components.

Q. WHO SHOULD CONDUCT PROGRAM EVALUATION?

A. Ideally, program evaluation is a team effort. An evaluation team (E-Team) should be developed that includes members from each program component. The E-Team should be aware of program goals and activities and should be designated to oversee evaluation activities including development of evaluation strategies, instruments, timelines, data collection procedures, data analysis and reporting of evaluation findings.

Q. HOW DO I BEGIN PROGRAM EVALUATION?

A. Program evaluation is built upon the foundation of a programmatic needs assessment. Needs assessment answers the following questions:

--Population: To what population is the program directed?
--Objectives: What types of outcomes should be targeted?
--Resources: What funds, facilities, and staff will be needed?
--Evaluation: What will determine the effectiveness of the program?

A needs assessment may be done on an informal or formal basis and is conducted by program developers and key players. Most simply, the need for the program may be documented from records that show outcomes that require intervention, i.e., students are dropping out of school, students are not retaining jobs, employers are reporting specific types of problems, achievement test scores are below LEA standards.

Q. HOW DO I KNOW WHAT COMPONENTS TO EVALUATE?

A. Once the need for programmatic intervention is evident, the cardinal guides for evaluation are programmatic objectives. Objectives may be developed from local needs assessment data and/or from state or federal regulations documents. All aspects of the program of intervention should be included in the evaluation plan and should be stated in such a way as to facilitate evaluation. The importance of practical, measurable, utilization focused

objectives cannot be understated. One rule may suffice: If the objectives of the program are properly stated, they can be evaluated. Thus, program evaluation is an integral component to program development. Consideration of the evaluation component while in the process of program development will assist in the development of an intervention program that is useful, directed and flexible to meet the needs of all individuals involved in the program.

Q. WHAT IS MEASURABLE OBJECTIVE?

A. A hierarchy of expression of programmatic objectives exists that are useful to the evaluation of programming.

(1) The most general statement of the program objective has been termed the Mission Statement (Smith, 1987). Mission statements describe in general terms what the program is trying to accomplish, the services provided and who it serves. It is broad enough to include all aspects of the program but not specific enough to provide evaluation measures.

Sample Transition Program Mission Statement:
To provide transition services to students in need of special education services, in order to minimize their functional limitations and to enhance their employability and economic independence through the provision of work experience, social and personal adjustment programs and functional academics.

(2) Programmatic goals provide the next step in the continuum of programmatic objectives. Goals restate the program mission, are more specific, yet do not provide measurable objective statements. They state the general area of intervention specified in the mission statement. The program identified in #1 has three programmatic goals.

Sample Transition Goals:
(a) To provide work adjustment training for students who are disabled.
(b) To provide social and personal adjustment training for students who are disabled.
(c) To provide functional academics for students who are disabled.

(3) Program Objectives provide the data on which program evaluations are based when they are written in concise language that are measurable and achievable. They are the highest level of programmatic objective statements and provide the program with information as to effectiveness of interventions.

Example of a Poor Transition Outcome Program Objective:
Students will be employed in competitive work environments after graduation from the program.

Example of a Measurable Transition Outcome Program Objective:
Fifty percent of students will be employed in competitive work

environments within six months after graduation from the program.

Q. HOW MANY OBJECTIVES DO I NEED TO INCLUDE?

A. Of course, the number of objectives is limitless. Smith (1987) suggests that the biggest danger facing the program evaluation team is the tendency to think that bigger is better. He suggests that more data gathered more frequently on more objective levels may not produce a more effective program evaluation. The key is to be practical. Choose evaluation collection procedures that provide adequate levels of confidence but do not burden staff with unnecessary data collection tasks.

Q. WHAT SPECIFIC TYPES OF OBJECTIVES SHOULD BE CONSIDERED?

A. Smith (1987) outlines three types of objectives that are included in a program evaluation.
Process Objectives--are monitors of student progress while in the program. They often describe the actual interventions used in the program. For example: Students who participate in the social behaviors program will show an improved score of 50% fewer behavior problems on a social behavior checklist, as rated by the social behavior teacher.
Outcome Objectives--specify the status of the student following exit from the program. They should reflect the benefits which students may achieve as a result of the program. For example: Seventy-five percent of employers of students rate students as able employees as measured by an employee evaluation form provided by that program.
Management Objectives--reflect the activities that are indicative of good management. They demonstrate commitment to the program in providing stable and effective intervention programs. For example: Within three years of program implementation the program will increase internal funding such that the salary of 50% of personnel will be paid by the supporting school district.

Q. WHAT TYPES OF MEASUREMENT DEVICES SHOULD BE UTILIZED?

A. Five broad types of measurement devices may be utilized. These include: standardized tests, questionnaires, observations, interviews and records review. All may be used as appropriate evaluation instruments and each has specific advantages and disadvantages. However, all evaluation devices should have two characteristics in common. They should be reliable and valid. A reliable instrument is one which yields the same, or very similar, results each time it is used to measure a specific object or objective. A valid instrument measures what it purports to measure. As Ratzlaff (1987) states, "A valid instrument is always a reliable one, but a reliable instrument is not always valid (p. 43)." An instrument may measure something in the same way each time it is used but it will be the responsibility of the E-Team to consider if it is a valid measurement of the construct of interest. Of important consideration when evaluating programs designed for special needs students is the fact that many standardized

measurement devices have not been normed on students with special needs. Although the instrument provides a reliable measure, it may not provide valid measurements of the student's abilities without special accommodations or the development of local norms.

Ratzlaff (1987) provides advantages and disadvantages of some of the types of measurement devices.

Standardized Ability Tests
Advantages: Administered in large groups at low cost; many are available; carefully developed, reliable and valid.
Disadvantages: Norms may not be available for special needs populations; expensive to develop; high scores do not necessarily imply that the tested knowledge can be applied.

Questionnaires
Advantages: Administered in large groups at low cost; administered through the mail to distant populations; easy to complete; produce objectified data, reduces judgmental data; reduces "socially acceptable" response set.
Disadvantages: Respondents may not provide sensitive information or omit key responses; must follow-up to obtain adequate response rates; may be difficult to develop reliable measurements; assumes respondents understand the questions and can read.

Observations
Advantages: Can observe events first hand; specific to locale and setting.
Disadvantages: Observers can change the environment; inter- and intra-observer reliability and objectivity can be difficult to obtain; standardized observation forms may be difficult to develop; time consuming/cost consuming.

Interviews (Telephone and Face-to-Face)
Advantages: Permits in-depth probing; sensitive issues can be discussed.
Disadvantages: Time consuming/costly; interviewers require special training; inter- and intra-observer reliability can be difficult to obtain; with telephone interviews sensitive issues may be difficult to probe, some individuals of interest may not have telephones.

Records Reviews
Advantages: Unobtrusive; inexpensive; no new data collection required.
Disadvantages: Records may be disorganized or unavailable; key variables may be omitted or missing from the record.

Q. WHEN DO I MEASURE OBJECTIVES?

A. Timing the measurement of objectives will depend on the specific objectives developed. Objectives may be: formative--those that require measurement across time at specified intervals to provide information regarding processes of the program; or,

summative--those which summarize formative data and provide an end of the year look at the progress made by the program (Boyer-Stephens, 1987). The final "Examples of Evaluation Materials" provides a sample of objectives measured at these two domains.

Q. WHAT TYPES OF DATA ANALYSIS TECHNIQUES SHOULD BE USED?

A. Data analysis is the final step in program evaluation prior to report evaluation results. As the program objectives shape the entire evaluation, you should choose analysis methods that will permit you to answer questions directly. Ratzlaff (1987) suggests that three types of techniques are used most frequently. These are: descriptive statistics, regression and analysis of variance.

Descriptive statistics are perhaps the most useful of data analysis techniques because they are meaningful, easily understood and simple to employ. Common descriptive statistics used include: mean--the average score on a particular measure; percentage--the number of individuals based on a denominator of the total sample who scored at a criterion level on a particular measure; range--the distance from the lowest score to the highest; and standard deviation==the range around the mean within which approximately 34% of the cases fall, given the values are distributed in a normal curve. Of these, the mean and standard deviation are most influenced by extreme scores and the assumption of a normal distribution. In most cases, due to small sample sizes, the assumption of normal distribution is not met. Thus, including the range in data reporting will aid in interpretation.

Regression analysis and analysis of variance are more complex statistical methods. Regression analysis is a method for determining the relationship between variables and for predicting important variables such as program outcome. Analysis of variance is useful for making comparisons across groups or across times. Both of these techniques require advanced statistical knowledge for proper application.

The decision about what type of data analysis techniques to utilize will be directed by your objectives. Most often descriptive techniques will suffice. However, regression analysis and analysis of variance can be quite useful in documenting the effectiveness of programming in later stages of program development. Both techniques require skillful measurement, sufficient sample size and careful interpretation. For more advanced statistical analysis the E-Team may want to consider hiring a statistician or someone skilled in statistical applications in educational settings.

Q. NOW THAT I HAVE CONDUCTED A PROGRAM EVALUATION, HOW CAN I USE THE DATA?

A. Program evaluation can be used for many purposes. Smith (1987) identifies six major uses of evaluation data apart from simple documentation that may be required by a funding agency. (1) The data collected may be used to increase student benefits and direct

selection of potential students as the program will have identified those who are in need of, and those who may benefit from services. (2) The data collected will help administrators and program staff develop and expand programs based on identified needs and success. Alternatively, evaluation data can identify areas of weakness and needed program development or reduction. (3) Evaluation data can provide information about cost efficiency in relation to student benefit. (4) Evaluation data can be used as a marketing tool in using actual results to document program successes and to attract new funding sources. (5) Communication of evaluation data can strengthen interactions with other organizations such as accreditation commissions, regulatory agencies and cooperative agencies. (6) Evaluation data can be useful in providing decision making data for advisory boards and school boards regarding policy and long range financial planning.

Q. WHAT ARE SOME FINAL IMPORTANT POINTS TO CONSIDER ABOUT PROGRAM EVALUATION?

A. It is important to have the support of all parties invested in the evaluation. From the advisory committee, to the district school board to the front line teacher, program evaluation is a team effort. Evaluation objectives are most easily measured over time as opposed to last minute rush jobs to get an evaluation document complete. Development of an approved evaluation timeline can be a lifesaver and impetus for support of your evaluation plan.

Finally, evaluation of programs may be resisted on many fronts. Individuals may fear negative evaluation and worry about program security. These worries can be put to rest by an effective evaluation plan. If your program is successful, develop your objectives to show this point. It is important to remember that program evaluation, in the generic sense, sacrifices individual differences as most data are based on groups of students. Some individuals may resist measurement of groups of students as they feel this minimizes individual differences and successes. Although this is often the case, don't be afraid to highlight individual success cases in narrative reports.

Resources

Albright, L. & Cobb, R. B. (1988). Establishing a curriculum-based vocational assessment. Alexandria, VA: American Vocational Association.

Boyer-Stephens, A. (1987). Vocational resource educator handbook. Columbia: University of Missouri, Missouri LINC.

Patton, M.Q. (1978). Utilization focused evaluation. Beverly Hills, CA: Sage Publications.

Ratzlaff, L.A. (1987). The education evaluator's workbook: How to assess educational programs. Alexandria, VA: Capitol

Publications.

Smith, C. (1987). Program evaluation: A self-study manual. Stout: University of Wisconsin, Materials Development Center.

Stake, R.E. (1986). Issues in research on evaluation: Improving the study of transition programs for adolescents with handicaps. Champaign, IL: Secondary Transition Intervention Effectiveness Institute.

EXAMPLES OF EVALUATION MATERIALS

The following provides an example of a portion of an evaluation plan for classroom implementation of transition services (Modified from Stake, 1986).

Program Mission: To provide transition services to students with severe physical and emotional handicaps to maximize their movement from school to work by the provision of work and social adjustment programming.

Goal 1 To provide work adjustment programming for identified students.

**Objective 1a: Ninety percent of students will achieve 100% of IEP objectives specifically designed to increase work adjustment behaviors.

Data Source: Summaries of teacher-collected data.
Timeline: Data collected quarterly and summarized at end of year.

**Objective 1b: At least ninety per cent of students will demonstrate significant increases (25% improvement) in positive on-site work behaviors over one year as measured by the Work Adjustment Scale (hypothetical scale).

Data Source: Work Adjustment Scale
Timeline: Scale measured pre-program (pre-test) by teacher in simulated work setting and again after one year in the work adjustment program by job coach in the work setting.

**Objective 1c: Fifty percent of students will be employed in competitive work situations six months after student completion of the program.

Data Source: Mail student follow-up questionnaire.
Timeline: Six months after student completion of program questionnaire is mailed.

**Objective 1d: Twenty-five percent of students will be involved in post-program vocational technical training programs six months after student completion of program.

Data Source: Mail student follow-up questionnaire.
Timeline: Six months after student completion of program questionnaire is mailed.

**Objective 1e: Seventy-five percent of parents rate the program as effective in providing services to assist their child in maintaining positive work behaviors as measured by the Parent Effectiveness Questionnaire.

Data Source: Parent Effectiveness Questionnaire (hypothetical scale).
Timeline: Teacher administrates questionnaire at end of year conference.

OUTCOME SUMMARY GOAL TABLE/Goal 1. Work Adjustment

Objective	Criterion	Obtained	Variance from Goal	Prior Year Goal/ Obtainment
1a 100% of the IEP Objectives Obtained	90%	95%	+5%	85%/90%
1b Significant Increase on Work Adjustment Scale	90%	90%	0	85%/85%
1c Students Competitively Employed	50%	40%	-10%	40%/40%
1d Students Engaged in Vocational Technical Training	25%	15%	-10%	20%/21%
1e Parents Rate Program	75%	76%	+1%	70%/75%

Summary: Objectives 1a, 1b, and 1e obtained to criterion level. Goals 1c and 1d obtained at sub-criterion rate. This may be due to difficulties in following up 25% of existing students. Solution: Employ stricter follow-up procedures next year, perhaps reduce goals to previous year level.

Future Objective to be Incorporated: 1f--Ten percent of students enroll in post-secondary education.

Management Goal 1 Staff will participate in development activities that enhance their effectiveness as transition specialists.

**Objective 1a: One hundred percent of teachers will participate in one vocational special needs related conference or inservice each year.

Data Source: Staff development activity record.
Timeline: End of year summary of activities reported at yearly teacher evaluation conference.

**Objective 1b: Twenty-five percent of teachers will provide inservice training to program staff each year.

Data Source: Staff development activity record.
Timeline: End of year summary of activities reported at yearly teacher evaluation conference. Teachers rotate year of inservice training.

**Objective 1c: Staff will develop yearly administrative summary reports of program progress and outcome to include summary of program activities and program evaluation data.

OUTCOME SUMMARY TABLE

Management Goal 1. Staff Development

Object		Criterion		
Obtained	Variance		Goal	from Goal
1a	Teachers Participate in Conference	100%	100%	0
1b	Teachers Provide Inservice	50%	45%	-5%
1c	Administrative Report	May 30	May 30	-

Summary: Objectives 1a and 1c obtained to criterion. 1b not obtained due to one teacher on extended leave of absence.